Curriculum & Faculty Rewards

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Vertically-Integrated Projects Program

• Currently VIP registration is as ECE listed courses
  – ECE 2811 Sophomore 1 credit
  – ECE 3811 3812 Junior 1 or 2 credit
  – ECE 4811 4812 Senior 1 or 2 credit

• Specific section number for each team
  – 31 teams x 5 courses per team > 150+ courses to manage

• Transitioning to "VIP" in place of ECE courses

• Typical class is 3 credits per semester
• ECE Credit:
  – If a student takes six or more credits of VIP, three can count as ECE elective credits and three can count as approved elective credits.

• Any combination of VIP courses accumulating 6+ credits. Additional credits count as approved elective.

• Goal is to have a substantial experience in a VIP team
  – 2-2-2 or 1-1-2-2 or …
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– VIP participation towards Senior Design if:
  • (a) their VIP project is suitable for an EE or CmpE culminating design project,
  • (b) they have previously registered for the same VIP team in 3 successive semesters prior to taking Senior Design II (ECE 4012);
  • (c) during those semesters they take VIP for at least 1 – 2 – 2 credits
  • (d) the last two credits are taken in their senior year; and
  • (e) they satisfy all other senior design requirements, including completion of Senior Design I (ECE 4011)

– Register for ECE 4012A + ECE 4012VP* by VIP permit
• ECE VIP Senior Design Course Sample

<table>
<thead>
<tr>
<th></th>
<th>VIP Course</th>
<th>Senior Design</th>
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<tbody>
<tr>
<td>Fall 2013</td>
<td>ECE 3811 VP3 (1 credit)*</td>
<td></td>
</tr>
<tr>
<td>Spring 2014</td>
<td>ECE 3812 VP3 (2 credit)</td>
<td></td>
</tr>
<tr>
<td>Fall 2014</td>
<td>ECE 4812 VP3 (2 credit)</td>
<td>ECE 4011 (2 credit)</td>
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<tr>
<td>Spring 2015</td>
<td>ECE 4012A + ECE 4012VP3 (3 credit)</td>
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• The 5 credits of VIP specific courses count for 3 ECE electives and 2 approved electives.
(a) Suitable EE or CmpE culminating design project

• Needs to have some hardware/software design and build aspect
  – Not all teams have relevant work areas

• Questions to Randal Abler (randal.abler@gatech.edu)
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• ECE 4012 A + VP* Grading
  – Major deliverables per Senior Design are required
    • Preliminary Proposal
    • Proposal
    • Final Report
    • Final Presentation
    • Design Notebook
  – These deliverables are submitted to Randal Abler
    randal.abler@gatech.edu for grading per VIP
    • Collaboration with Team Advisor
    • Forwarded to Senior Design team for long term archival & review
• Curriculum must establish a clear incentive for 2 year participation
  – 6 credits (could be achieved in 3 semesters)
  – Builds student leadership and embedded knowledge

• One semester participation needs to be actively discouraged
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• Another model
  – Any total of less than 6 credits is free elective,
  – A total of 6 credits counts as 6 technical elective credits
    • Additional credits beyond 6 are free elective

• Credits on the same team
  – avoids team hopping
  – with an exception mechanism for special cases
    • Teams ending/transitioning
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• Our approach to curriculum committees (laborious)
  – 1) Advisor in new discipline likes VIP concept, wants team
  – 2) We assist advisor in presenting case to their school
    • Academic credit for students
    • Workload credit for faculty
  – 3) Not all advisors wait for curriculum committee approval before starting teams
  – 4) Capstone/Senior Design credit often approved in a second iteration
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• Faculty Rewards:
  – Research productivity motivation
    • Some cases VIP streamlines what faculty are already doing with undergraduates in their research program
  – Rewarding Teaching experience

• Initial startup lacks clear reward
  – 1 course workload credit total for combination of first two semesters of teaching a team
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While building numbers is a criteria, a strong initial implementation of VIP is critical to long term success.